DMSO

HLA Compliance Checklist

24 April 1996

HLA Compliance Checklist

DMSO

- **Procedure-oriented description of requirements for HLA compliance**
  - **Integrates elements from definition**
    - **rules**
    - **interface specification**
    - **OMT specifications**
- **Three components**
  - **Federate Checklist**
  - **Federation Checklist**
  - **RTI Checklist**
- **Initial emphasis is on federate and federation checklists**
  - **RTI checklist is critical to RTI certification; RTI prototyping will provide needed input**

Federate Checklist
Compliance Item 1

DMSO

- **Compliance Item 1: The federate has an HLA SOM in OMT format (reference OMT specification).**
  - **Review OM format with respect to OMT specification**
  - **Need to develop OMT review guidelines and process (OMTWG?)**

Federate Checklist
Compliance Item 2

DMSO

- **The federate is able to publish/reflect any attributes of objects in their SOM and exercise SOM object interactions externally.**
  - **Test federate interface to RTI for selected interface functions for selected items in SOM**
    - **No exhaustive testing recommended; test is to ensure that needed underlying structural functionality is present; owner of federate is responsible to ensure that detailed data in SOM is accurate.**
  - **Need to design interface test procedure; eventually with automated support tool [base on current interface test procedure for selected SOM items for the selected interface functions]**

Subscribe Object Class
Subscribe Object Attribute
Subscribe Interaction Class
Publish Object Class
Publish Object Attribute
Request/Provide Attribute
Publish Interaction Class
Control Updates
Control Interactions
Update/Reflect Attribute
Send/Receive Interaction

Federate Checklist
Compliance Item 3

DMSO

- **Federates must be able to own or reflect attributes and to transfer/ accept ownership of attributes dynamically during a federation execution, as specified in their SOM.**
  - **Test federate interface to RTI for selected interface functions for selected items in SOM**
    - No exhaustive testing recommended; test is to ensure that needed underlying structural functionality is present; owner of federate is responsible to ensure that detailed data in SOM is accurate.
  - **Need to design interface test procedure; eventually with automated support tool [base on interface test procedure for selected SOM items for the interface functions listed below]**

Id Request
Instantiate Object
Instantiate Discovered Object
Delete/Remove Object
Cancel Reflection/Remove Object
*Attribute Ownership Acquisition
*Attribute Ownership Divestiture
*Unconditional Attribute Ownership Divestiture
Query Attribute Ownership

Federate Checklist
Compliance Item 4

DMSO

- **Federates must be able to vary the conditions under which they provide updates of public attributes of objects according to their SOM.**
  - **Test federate interface to RTI for selected interface functions for selected items in SOM**
  - **No exhaustive testing recommended; test is to ensure that needed underlying structural functionality is present; owner of federate is responsible to ensure that detailed data in SOM is accurate.**
  - **Need to design interface test procedure; eventually with automated support tool [base on interface test procedure for selected SOM items for interfaces listed below]**

    Update/Reflect Attribute (bound by the SOM)

Federate Checklist
Compliance Item 5

DMSO

- **Federates must be able to manage local time in a way which will allow them to coordinate data exchange with other members of a federation in accordance with at least one of the available HLA time management services.**
  - **Test federate interface to RTI for selected interface functions for selected items in SOM**
    - No exhaustive testing recommended; test is to ensure that needed underlying structural functionality is present; owner of federate is responsible to ensure that detailed data in SOM is accurate.
  - **Need to design interface test procedure; eventually with automated support tool [base on interface test procedure for selected SOM items for selected interfaces]**

Initialize Federate Time and Rate	*Set Lookahead
*Time Advance	*Next Event
*Retract	Request Federate Time
*Request Federation Rate	*Request Lookahead
*Change Federation Time	*Change Federation Rate

Federate Checklist
Compliance Item 6

DMSO

- **During a federation execution, federates must interact with the runtime infrastructure (RTI) in accordance with the HLA interface specification.**
  - **Test federate interfaces to RTI for selected interface functions which will be required to operate in a federation**
  - **Need to design interface test procedure; eventually with automated support tool [base on interface test procedure for the interface functions listed below]**

Create Federation	Destroy Federation
Join Federation	Resign Federation
*Pause Federation Execution	*Resume Federation Execution
*Paused Save Federation Execution	Rolling Save Federation Execution
Restore Federation Execution	Query

Federation Checklist
Compliance Item 1

DMSO

- **Federations must have an HLA Object Model (a federation object model or FOM), documented using the HLA OMT.**
  - **Review OM format with respect to OMT specification**
  - **Need to develop OMT review guidelines and process (OMTWG?)**

Federation Checklist
Compliance Item 2

DMSO

- **In a federation, all object representation (ownership or reflection) occurs in the Federates, not in the runtime infrastructure (RTI).**
  - **Review federation design/enforced by RTI**
  - **If the federation is using a compliant RTI, it will comply with this item**

Federation Checklist
Compliance Item 3

DMSO

- **During a federation execution, data exchange (attribute values and interactions) among instances of objects defined in the FOM represented (owned or reflected) in different federates occurs via the RTI.**
  - **Review federation design/operations**

Federation Checklist
Compliance Item 4

DMSO

- **During a federation execution, federates must interact with the runtime infrastructure (RTI) in accordance with the HLA interface specification.**
  - **Test all federates for compliance with interface specification; no added testing is needed if all Federates are HLA compliant**
  - **See Federate Compliance Checklist and HLA interface procedures**

Federation Checklist
Compliance Item 5

DMSO

- **During a federation execution, an attribute of an instance of an object can be owned by only one federate at any given time.**
  - **Review federation design; Use of a compliant RTI ensures this**

RTI Checklist
Compliance Item 1

DMSO

- **During a federation execution, the runtime infrastructure (RTI) must interact with federates in accordance with the HLA interface specification.**
  - **Test RTI federate interfaces to RTI for selected interface functions which will be required to operate in a federation**
  - **Need to design interface test procedure; eventually with automated support tool**
  - **Base on interface test procedure for the full set of interface functions**

RTI Checklist
Compliance Item 2

DMSO

- **RTI must provide services as called for by the federates via the interface in accordance with the RTI functional specification.**
  - **Test RTI for compliance with RTI functional specification**
  - **Need to develop an RTI functional specification (Needed for RTI acquisition) and test, preferably automated**

RTI Checklist
Compliance Item 3

DMSO

- **In a federation, all object representation (ownership or reflection) occurs in the Federates, not in the runtime infrastructure (RTI).**
  - **Review RTI design to ensure that the RTI is ‘stateless’; i.e. it does not retain ‘reflections’ of objects / attributes represented in the federates.**

RTI Checklist
Compliance Item 4

DMSO

- **During a federation execution, the RTI should enforce the fact that an attribute of an instance of an object can be owned by only one federate at any given time.**
  - **Need to design a test for this item.**